

[REDACTED]

December 06, 2016

[REDACTED]

TETRA TECH EMI
415 Oak
Kansas City, MO 64106

RE: Project: PCE Chestnut
Pace Project No.: 60232865

Dear [REDACTED]:

Enclosed are the analytical results for sample(s) received by the laboratory on November 22, 2016. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

[REDACTED]

[REDACTED]

Project Manager

Enclosures



REPORT OF LABORATORY ANALYSIS

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B7A4 40531064 54
Superfund
DU-00 12/6/16 CTL

CERTIFICATIONS

Project: PCE Chestnut

Minnesota Certification IDs

1700 Elm Street SE Suite 200, Minneapolis, MN 55414

525 N 8th Street, Salina, KS 67401

Alaska Certification UST-107

A2LA Certification #: 2926.01

Alaska Certification #: UST-078

Alaska Certification #MN00064

Alabama Certification #40770

Arizona Certification #: AZ-0014

Arkansas Certification #: 88-0680

California Certification #: 01155CA

Colorado Certification #Pace

Connecticut Certification #: PH-0256

EPA Region 8 Certification #: 8TMS-L

Florida/NELAP Certification #: E87605

Guam Certification #:14-008r

Georgia Certification #: 959

Georgia EPD #: Pace

Idaho Certification #: MN00064

Hawaii Certification #MN00064

Illinois Certification #: 200011

Indiana Certification#C-MN-01

Iowa Certification #: 368

Kansas Certification #: E-10167

Kentucky Dept of Envi. Protection - DW #90062

Kentucky Dept of Envi. Protection - WW #:90062

Louisiana DEQ Certification #: 3086

Louisiana DHH #: LA140001

Maine Certification #: 2013011

Maryland Certification #: 322

Michigan DEPH Certification #: 9909

Minnesota Certification #: 027-053-137

Mississippi Certification #: Pace

Montana Certification #: MT0092

Nevada Certification #: MN_00064

Nebraska Certification #: Pace

New Jersey Certification #: MN-002

New York Certification #: 11647

North Carolina Certification #: 530

North Carolina State Public Health #: 27700

North Dakota Certification #: R-036

Ohio EPA #: 4150

Ohio VAP Certification #: CL101

Oklahoma Certification #: 9507

Oregon Certification #: MN200001

Oregon Certification #: MN300001

Pennsylvania Certification #: 68-00563

Puerto Rico Certification

Saipan (CNMI) #:MP0003

South Carolina #:74003001

Texas Certification #: T104704192

Tennessee Certification #: 02818

Utah Certification #: MN000642013-4

Virginia DGS Certification #: 251

Virginia/VELAP Certification #: Pace

Washington Certification #: C486

West Virginia Certification #: 382

West Virginia DHHR #:9952C

Wisconsin Certification #: 999407970

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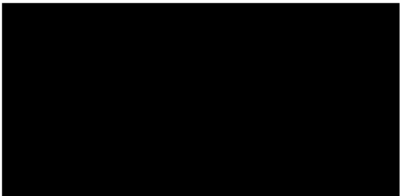
SAMPLE SUMMARY

Project: PCE Chestnut
[Redacted]

Lab ID	Sample ID	Matrix	Date Collected	Date Received
60232865001	500 Chestnut	Air	11/17/16 09:30	11/22/16 09:00

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SAMPLE ANALYTE COUNT

Project: PCE Chestnut
[Redacted]

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
60232865001	500 Chestnut	TO-15	NCK	4	[Redacted]

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ANALYTICAL RESULTS

Project: PCE Chestnut

Sample: 500 Chestnut		Lab ID: 60232865001	Collected: 11/17/16 09:30	Received: 11/22/16 09:00	Matrix: Air			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
TO15 MSV AIR		Analytical Method: TO-15						
cis-1,2-Dichloroethene	ND	ug/m3	1.3	1.61		12/01/16 14:52	156-59-2	
Trichloroethene	ND	ug/m3	0.89	1.61		12/01/16 14:52	79-01-6	
Tetrachloroethene	5.3	ug/m3	1.1	1.61		12/01/16 14:52	127-18-4	
trans-1,2-Dichloroethene	ND	ug/m3	1.3	1.61		12/01/16 14:52	156-60-5	

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Date: 12/06/2016 03:03 PM

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QUALITY CONTROL DATA

Project: PCE Chestnut

QC Batch: 449881

Analysis Method: TO-15

QC Batch Method: TO-15

Analysis Description: TO15 MSV AIR Low Level

Associated Lab Samples: 60232865001

METHOD BLANK: 2463864

Matrix: Air

Associated Lab Samples: 60232865001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
cis-1,2-Dichloroethene	ug/m3	ND	0.81	12/01/16 10:48	
Tetrachloroethene	ug/m3	ND	0.69	12/01/16 10:48	
trans-1,2-Dichloroethene	ug/m3	ND	0.81	12/01/16 10:48	
Trichloroethene	ug/m3	ND	0.55	12/01/16 10:48	

LABORATORY CONTROL SAMPLE: 2463865

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
cis-1,2-Dichloroethene	ug/m3	40.3	36.5	91	65-139	
Tetrachloroethene	ug/m3	68.9	66.0	96	60-142	
trans-1,2-Dichloroethene	ug/m3	40.3	41.7	104	67-137	
Trichloroethene	ug/m3	54.6	47.2	86	60-144	

SAMPLE DUPLICATE: 2463878

Parameter	Units	60232865001 Result	Dup Result	RPD	Max RPD	Qualifiers
cis-1,2-Dichloroethene	ug/m3	ND	ND		25	
Tetrachloroethene	ug/m3	5.3	5.6	6	25	
trans-1,2-Dichloroethene	ug/m3	ND	ND		25	
Trichloroethene	ug/m3	ND	ND		25	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

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the 1990s, the number of people in the United States who are aged 65 and older has increased by 25 percent. The number of people aged 75 and older has increased by 40 percent. The number of people aged 85 and older has increased by 60 percent. The number of people aged 95 and older has increased by 100 percent. The number of people aged 100 and older has increased by 200 percent. The number of people aged 105 and older has increased by 400 percent. The number of people aged 110 and older has increased by 800 percent. The number of people aged 115 and older has increased by 1,600 percent. The number of people aged 120 and older has increased by 3,200 percent. The number of people aged 125 and older has increased by 6,400 percent. The number of people aged 130 and older has increased by 12,800 percent. The number of people aged 135 and older has increased by 25,600 percent. The number of people aged 140 and older has increased by 51,200 percent. The number of people aged 145 and older has increased by 102,400 percent. The number of people aged 150 and older has increased by 204,800 percent. The number of people aged 155 and older has increased by 409,600 percent. The number of people aged 160 and older has increased by 819,200 percent. The number of people aged 165 and older has increased by 1,638,400 percent. The number of people aged 170 and older has increased by 3,276,800 percent. The number of people aged 175 and older has increased by 6,553,600 percent. The number of people aged 180 and older has increased by 13,107,200 percent. The number of people aged 185 and older has increased by 26,214,400 percent. The number of people aged 190 and older has increased by 52,428,800 percent. The number of people aged 195 and older has increased by 104,857,600 percent. The number of people aged 200 and older has increased by 209,715,200 percent. The number of people aged 205 and older has increased by 419,430,400 percent. The number of people aged 210 and older has increased by 838,860,800 percent. The number of people aged 215 and older has increased by 1,677,721,600 percent. The number of people aged 220 and older has increased by 3,355,443,200 percent. The number of people aged 225 and older has increased by 6,710,886,400 percent. The number of people aged 230 and older has increased by 13,421,772,800 percent. The number of people aged 235 and older has increased by 26,843,545,600 percent. The number of people aged 240 and older has increased by 53,687,091,200 percent. The number of people aged 245 and older has increased by 107,374,182,400 percent. The number of people aged 250 and older has increased by 214,748,364,800 percent. The number of people aged 255 and older has increased by 429,496,729,600 percent. The number of people aged 260 and older has increased by 858,993,459,200 percent. The number of people aged 265 and older has increased by 1,717,986,918,400 percent. The number of people aged 270 and older has increased by 3,435,973,836,800 percent. The number of people aged 275 and older has increased by 6,871,947,673,600 percent. The number of people aged 280 and older has increased by 13,743,895,347,200 percent. The number of people aged 285 and older has increased by 27,487,790,694,400 percent. The number of people aged 290 and older has increased by 54,975,581,388,800 percent. The number of people aged 295 and older has increased by 109,951,162,777,600 percent. The number of people aged 300 and older has increased by 219,902,325,555,200 percent. The number of people aged 305 and older has increased by 439,804,651,110,400 percent. The number of people aged 310 and older has increased by 879,609,302,220,800 percent. The number of people aged 315 and older has increased by 1,759,218,604,441,600 percent. The number of people aged 320 and older has increased by 3,518,437,208,883,200 percent. The number of people aged 325 and older has increased by 7,036,874,417,766,400 percent. The number of people aged 330 and older has increased by 14,073,748,835,532,800 percent. The number of people aged 335 and older has increased by 28,147,497,671,065,600 percent. The number of people aged 340 and older has increased by 56,294,995,342,131,200 percent. The number of people aged 345 and older has increased by 112,589,990,684,262,400 percent. The number of people aged 350 and older has increased by 225,179,981,368,524,800 percent. The number of people aged 355 and older has increased by 450,359,962,737,049,600 percent. The number of people aged 360 and older has increased by 900,719,925,474,099,200 percent. The number of people aged 365 and older has increased by 1,801,439,850,948,198,400 percent. The number of people aged 370 and older has increased by 3,602,879,701,896,396,800 percent. The number of people aged 375 and older has increased by 7,205,759,403,792,793,600 percent. The number of people aged 380 and older has increased by 14,411,518,807,585,587,200 percent. The number of people aged 385 and older has increased by 28,823,037,615,171,174,400 percent. The number of people aged 390 and older has increased by 57,646,075,230,342,348,800 percent. The number of people aged 395 and older has increased by 115,292,150,460,684,697,600 percent. The number of people aged 400 and older has increased by 230,584,300,921,369,395,200 percent. The number of people aged 405 and older has increased by 461,168,601,842,738,790,400 percent. The number of people aged 410 and older has increased by 922,337,203,685,477,580,800 percent. The number of people aged 415 and older has increased by 1,844,674,407,370,955,161,600 percent. The number of people aged 420 and older has increased by 3,689,348,814,741,910,323,200 percent. The number of people aged 425 and older has increased by 7,378,697,629,483,820,646,400 percent. The number of people aged 430 and older has increased by 14,757,395,258,967,641,292,800 percent. The number of people aged 435 and older has increased by 29,514,790,517,935,282,585,600 percent. The number of people aged 440 and older has increased by 59,029,581,035,870,565,171,200 percent. The number of people aged 445 and older has increased by 118,059,162,071,741,130,342,400 percent. The number of people aged 450 and older has increased by 236,118,324,143,482,260,684,800 percent. The number of people aged 455 and older has increased by 472,236,648,286,964,521,369,600 percent. The number of people aged 460 and older has increased by 944,473,296,573,929,042,739,200 percent. The number of people aged 465 and older has increased by 1,888,946,593,147,858,085,478,400 percent. The number of people aged 470 and older has increased by 3,777,893,186,295,716,170,956,800 percent. The number of people aged 475 and older has increased by 7,555,786,372,591,432,341,913,600 percent. The number of people aged 480 and older has increased by 15,111,572,745,182,864,683,827,200 percent. The number of people aged 485 and older has increased by 30,223,145,490,365,729,367,654,400 percent. The number of people aged 490 and older has increased by 60,446,290,980,731,458,735,308,800 percent. The number of people aged 495 and older has increased by 120,892,581,961,462,917,470,617,600 percent. The number of people aged 500 and older has increased by 241,785,163,922,925,834,941,235,200 percent. The number of people aged 505 and older has increased by 483,570,327,845,851,669,882,470,400 percent. The number of people aged 510 and older has increased by 967,140,655,691,703,339,764,940,800 percent. The number of people aged 515 and older has increased by 1,934,281,311,383,406,679,529,881,600 percent. The number of people aged 520 and older has increased by 3,868,562,622,766,813,359,059,763,200 percent. The number of people aged 525 and older has increased by 7,737,125,245,533,626,718,119,526,400 percent. The number of people aged 530 and older has increased by 15,474,250,491,067,253,436,239,052,800 percent. The number of people aged 535 and older has increased by 30,948,500,982,134,506,872,478,105,600 percent. The number of people aged 540 and older has increased by 61,897,001,964,269,013,744,956,211,200 percent. The number of people aged 545 and older has increased by 123,794,003,928,538,027,489,912,422,400 percent. The number of people aged 550 and older has increased by 247,588,007,857,076,054,979,824,844,800 percent. The number of people aged 555 and older has increased by 495,176,015,714,152,109,959,649,689,600 percent. The number of people aged 560 and older has increased by 990,352,031,428,304,219,919,299,379,200 percent. The number of people aged 565 and older has increased by 1,980,704,062,856,608,439,838,598,758,400 percent. The number of people aged 570 and older has increased by 3,961,408,125,713,216,879,677,197,516,800 percent. The number of people aged 575 and older has increased by 7,922,816,251,426,433,759,354,395,033,600 percent. The number of people aged 580 and older has increased by 15,845,632,502,852,867,518,708,790,067,200 percent. The number of people aged 585 and older has increased by 31,691,265,005,705,735,037,417,580,134,400 percent. The number of people aged 590 and older has increased by 63,382,530,011,411,470,074,835,160,268,800 percent. The number of people aged 595 and older has increased by 126,765,060,022,822,940,149,670,320

ND - Not Detected at or above adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

RL - Reporting Limit.

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

LCS(D) - Laboratory Control Sample (Duplicate)

DUP - Sample Duplicate

NC - Not Calculable.

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

██████████ is TNI accredited. Contact your ████████ PM for the current list of accredited analytes.

TNI - The NELAC Institute.

[REDACTED]

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: PCE Chestnut
Pace Project No.: 60232865

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60232865001	500 Chestnut	TO-15	449881		

REPORT OF LABORATORY ANALYSIS

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	Document Name: Air Sample Condition Upon Receipt	Document Revised: 26APR2016
	Document No.: F-MN-A-105-rev.11	Page 1 of 1
		Issuing Authority: [Redacted]

**Air Sample Condition
Upon Receipt**

Client Name:

Project #:

WO#: 60232865



Courier: ☒ Fed Ex ☐ UPS ☐ Speedee ☐ Client
☐ Commercial ☐ Pace ☐ Other:

Tracking Number: 128712490197027765

Custody Seal on Cooler/Box Present? ☐ Yes ☒ No Seals Intact? ☐ Yes ☒ No

Optional: Proj. Due Date: Proj. Name:

Packing Material: ☐ Bubble Wrap ☐ Bubble Bags ☒ Foam ☐ None ☐ Tin Can ☐ Other:

Temp Blank rec: ☒ Yes ☐ No

Temp. (TO17 and TO13 samples only) (°C): 30 Corrected Temp (°C): 30

Thermom. Used: ☐ B88A912167504 ☐ B88A0143310098

☐ 151401169 ☐ 151401164

Temp should be above freezing to 6°C Correction Factor: 0

Date & Initials of Person Examining Contents: 11/22/16

Type of ice Received ☐ Blue ☐ Wet ☒ None

Comments:

Chain of Custody Present?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	1.
Chain of Custody Filled Out?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	2.
Chain of Custody Relinquished?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	3.
Sampler Name and/or Signature on COC?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	4.
Samples Arrived within Hold Time?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	5.
Short Hold Time Analysis (<72 hr)?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	6.
Rush Turn Around Time Requested?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	7.
Sufficient Volume?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	8.
Correct Containers Used?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	9.
Containers Used?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Containers Intact?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	10.
Media: <u>Air Can</u> Airbag Filter TDT Passive		11.
Sample Labels Match COC?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	12.

Samples Received:

Canisters			Canisters		
Sample Number	Can ID	Flow Controller ID	Sample Number	Can ID	Flow Controller ID
	1746				

CLIENT NOTIFICATION/RESOLUTION

Person Contacted:

Field Data Required? ☐ Yes ☐ No

Comments/Resolution:

Report PCE, TCE and cis/trans 1,2

Project Manager Review:

Date:

Note: Whenever there is a discrepancy in the samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e. out of hold, incorrect preservative, out of temp, incorrect containers)

AIR: CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

22286

Page: of

Section A Required Client Information:

Company: Tetra Tech EME
Address: 415 Oak St
Kansas City, MO 64108
Phone: 816 417 1788
Requested Due Date/TAT:

Section B

Company: [Redacted]
Address: [Redacted]
Purchase Order No.:
Project Name: PCE Chestnut
Project Number:

Section C

Attention:
Company Name:
Address:
Pace Quote Reference:
Pace Project Manager/Sales Rep.
Pace Profile #:

Program
☐ UST ☐ Superfund ☐ Emissions ☐ Clean Air Act
☐ Voluntary Clean Up ☐ Dry Clean ☐ RCRA ☐ Other
Location of Sampling by State:
Reporting Units:
ugm/
mg/m³
PPBV
PPMV
Other
Report Level: II, III, IV, Other

ITEM #	Section D Required Client Information AIR SAMPLE ID Sample IDs MUST BE UNIQUE	Valid Media Codes MEDIA Teflon Bag 1 Liter Summa Can 6 Liter Summa Can Low Volume Puff High Volume Puff Other	CODE TB 100 6LC LVP HVP PM10	MEDIA CODE	PID Reading (Client only)	COLLECTED				Canister Pressure (Initial Field - psig)	Canister Pressure (Final Field - psig)	Summa Can Number	Flow Control Number	Method: P10 JC Final Gas (%) T03 T03M (Methane) T04 (P205) T011 (PM10) T015 T015 Short List	Pace Lab ID
						COMPOSITE START NEWFIELD		COMPOSITE							
						DATE	TIME	DATE	TIME						
1	SOC Chestnut					11/7/16	9:30	11/9/16	16:40	-30	-9.2	113	F C 1078		
2															
3															
4															
5															
6															
7															
8															
9															
10															
11															
12															

Comments:

RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS			
				11/21/16	0400	Temp	Y/N	Y/N	Y/N
						Received on Ice	Y/N	Y/N	Y/N
						Cooling Coiled	Y/N	Y/N	Y/N
						Sealed Cooler	Y/N	Y/N	Y/N
						Samples Intact	Y/N	Y/N	Y/N

ORIGINAL

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER

SIGNATURE of SAMPLER

DATE Signed (MM/DD/YY)